



CALIFORNIA FARM BUREAU FEDERATION

NATURAL RESOURCES AND ENVIRONMENTAL DEPARTMENT

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Sent via E-Mail

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January 25, 2011

Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

Re: **Comments on Delta Stewardship Council Delta as a Place: Agriculture White Paper dated December 6, 2010**

To Whom It May Concern:

The California Farm Bureau Federation is a non-governmental, non-profit, voluntary membership California corporation whose purpose is to protect and promote agricultural interests throughout the state of California and to find solutions to the problems of the farm, the farm home and the rural community. Farm Bureau is California's largest farm organization, comprised of 53 county Farm Bureaus currently representing approximately 76,500 members in 56 counties. Farm Bureau strives to protect and improve the ability of farmers and ranchers engaged in production agriculture to provide a reliable supply of food and fiber through responsible stewardship of California's resources.

The Delta Stewardship Council's December 6, 2010 "Delta As A Place: Agriculture White Paper" ("White Paper") serves in many respects as a useful compilation of data and statistics related to Delta agriculture. However, when faced with major policy issues such as flood control and proposed large-scale changes in land use patterns and water conveyance in the Delta the White Paper fails to recognize the extraordinary value and importance of agriculture in general and in the Sacramento-San Joaquin River Delta region in particular.

Dollars-and-Cents versus Agriculture as Human Food Supply

The most fundamental problem with the White Paper concerns the inadequacy of dollars-and-cents comparisons of the sort found on pages 4-1 and 4-2 of the White Paper, concerning the gross farmgate value of California agriculture in relation to the gross domestic product of the State of California.

"California," the text on pages 4-1 and 4-2 of the White Paper reads, "is the leading agricultural [producing state] in the nation, with 14 percent of the nation's agricultural GDP and more than twice as much agricultural GDP than the next state, Texas." "Although the value of California's

agricultural production is large,” the text continues, “[at] approximately \$38 billion in 2009 [...], this represents about 2 percent of California’s estimated gross domestic product in 2009 (\$1.9 trillion).” “[I]ndirect economic activities related to agriculture,” the White Paper is quick to add, “also add to the state’s economy.”¹ Thus, as the Paper notes, “the value of agriculture in California and America is not simply an economic calculation,” to the extent that “most industrial societies value their agricultural roots and derive enjoyment from the aesthetic and cultural value of agricultural landscapes, even as fewer people work the land and directly derive their incomes from the farming.”

*Is there, though, any “industrial society” whose people do not eat?*²

The obvious problem with such cut-and-dried, dollars-and-cents assessments of the value of agriculture in the Delta, the State of California, the rest of the nation, or the world is that such assessments ignore that which is undeniable:

1. People eat.
2. The world is full of people (currently an estimated 311 million in the United States and 6.9 billion worldwide).³
3. Without large and dependable quantities of food, many of those people would go hungry (or, at least, be at an acute risk of going hungry, in the event of some cataclysm, such as a war, a drought, or a collapse in world markets).
4. Agriculture produces the food to feed all of these people.

Key Policy Considerations Concerning the Importance of Agriculture in the California, the United States, and the World

In many ways, the difficult and important policy issues with which the DSC is currently wrestling frame and mirror the larger debate in California concerning allocation of limited natural resources among various competing uses. In the context of this debate, agriculture is frequently (and unjustly) villainized and scapegoated. Proposals to simply reallocate land and water from existing agricultural uses to environmental or other uses ignore the tremendous value and importance of agriculture itself and the public benefits it provides—not least of all as the

¹ More precisely, on this point, the California Department of Food and Agriculture estimates that California’s \$36.6 billion in direct farm gate revenues in turn stimulated at least \$100 billion in related economic activity. (For more on economic ripple and multiplier effects see discussion below under the heading “Agriculture in California’s Central Valley Generally.”)

² While it may be that the direct farmgate value of California agriculture represents 2 percent of California’s economy, one finds that the direct economic value of agricultural production nationally and globally in relation to the national or global economy is comparable: 0.7 percent of the U.S. economy per the USDA (See USDA Economic Research Service, “The Twentieth Century Transformation of Agriculture,” Dimitri, et al.) and 6 percent of the world economy (IndexMundi World Economy Profile 2010, http://www.indexmundi.com/world/economy_profile.html). Again, though, quite apart from the indirect “multiplier effects” of California’s, the United States’, or the world’s agricultural economy, who in California, the United States, or the world can go without eating?

³ U.S. Census “Population Clock,” <http://www.census.gov/main/www/popclock.html>.

food supply for a large and growing population. These values are the same, whether in the Delta, in areas upstream or south of the Delta, or elsewhere in California, the United States, or the world. The sections which follow attempt to highlight these extraordinary, significant, and irreplaceable values, to stress the fundamental importance of agriculture to human beings locally, national, globally, or statewide, and also to call attention some frequently overlooked facts and statistics and some of the important policy implications of the same.

1. Feeding the World Requires Significant Amounts of Land and Water

Producing food for a growing global population—or even our own country—requires large amounts of land, water, and other outputs (in the Delta, in the Central Valley, in America, or anywhere else in the world).

Worldwide, to sustain a global population of 6.9 billion people, there are an estimated 543 to 618 million acres of irrigated farmland in production, with over half of this acreage occurring in India, China, the United States, and Pakistan.⁴ Hunger remains a real problem in the 21st century with an estimated 882 million people worldwide currently classified as “food-insecure” (that is having a diet of less than 2,100 calories per day per person).⁵

Grasslands, pasture, and grazing lands and cropland in all 50 of the United States of America represent an estimated 23.3 and 19.5 percent or 587 and 442 million acres, respectively, of a total 2,264 million acres in all land use categories.⁶ In California, out of a total land area of some 100 million acres (of which 45 million acres—or 45 percent—are federally owned public lands as of 1999), the California Department of Conservation currently classifies 12,328,508 acres as “important farmland” (of which some 9.6 million acres are cropland “irrigated cropland”) and 16,521,928 acres as “grazing land.”⁷

Nationwide, in 2000, 159 million acre-feet of a total of 387 million acre-feet of fresh water in the United States was extracted and applied to some 60 million acres of irrigated cropland (representing roughly 59 percent surface water and 37-41 percent groundwater).⁸

In California, of the between 145.5 and 336.9 million acre-feet of water either falling annually in form of precipitation or entering California from other states or Mexico, or available from storage or groundwater, an average of 34.2 million acre-feet a year are used to irrigate 9.6

⁴ Columbia Encyclopedia, Sixth Edition, 2008, *Encyclopedia.com*; U.S. Census Population Clock, <http://www.census.gov/main/www/popclock.html>.

⁵ USDA Economic Research Service, Food Security Assessment 2010-2020, July 2010.

⁶ See USDA Economic Research Service Agricultural Resources and Environmental Indicators, Ed. 2006, Chapter 1.1, “Land Use.”

⁷ Bureau of Land Management Public Land Statistics 1999, Comparison of Federally Owned Land with Total Acreage of States, http://www.blm.gov/public_land_statistics/pls99/index.html; California Department of Conservation 2004-2006 California Farmland Conversion Summary, http://redirect.conservation.ca.gov/DLRP/fmmp/regional_statewide_info_results.asp; California Water Plan Update 2009, Chapter 2, Agricultural Water Use Efficiency, p. 2-6.

⁸ See USDA Economic Research Service Agricultural Resources and Environmental Indicators, ed. 2006, Chapter 2.1, “Irrigation Resources and Water Costs”; Columbia Encyclopedia, Sixth Edition, 2008, *Encyclopedia.com*.

million acres of irrigated cropland.⁹ Of an average annual total of 43.4 million acre-feet used by agricultural, urban, and managed wetlands combined, an average of 35% or 15 million acre-feet is met from groundwater, with the majority of that use occurring in the Central Valley.¹⁰ Thus, for the recent 1998-2001 period, agricultural water use in a wet year, a normal year, and a below normal year, ranged from 29 to 52 percent of California's "dedicated water supply," while "environmental water use" (made up of instream flows, wild and scenic flows, required Delta flow, and managed wetlands water use) made up between 35 and 63 percent.¹¹ Producing sufficient food to feed a large and growing population, both domestically, globally, and within the State of California, requires large amounts of land and water, even at very high levels of per acre productivity and water use efficiency (in which categories California farmers, by the way, are leaders). (See sections concerning efficiency and productivity of California and U.S. agriculture below.)

2. California Agriculture Produces More and Higher Quality Food Per Unit of Input Than Any Other State in the Union

As shown in the first chart below, California is ranked first among all 50 United States in terms of both California's existing level and rate of growth of agricultural productivity. Moreover, among Western states, California's relative level of productivity and productivity growth rate is even more remarkable.

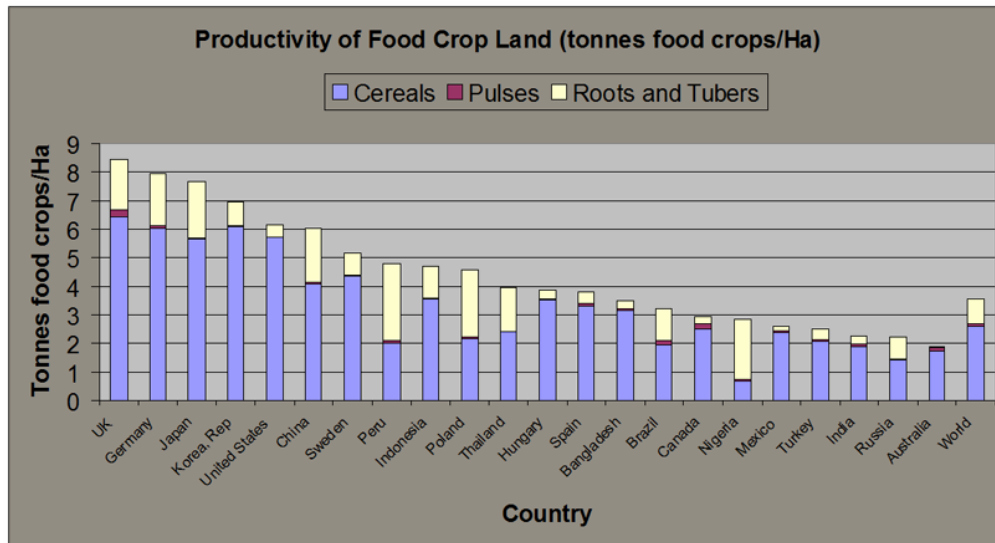
Top 10 U.S. states ranked by relative level and rate of growth of agricultural productivity (food produced per unit of land, water, and other inputs)		California ranking by level and rate of growth of agricultural productivity relative to other Western states	
State	Rank in 2004	State	Rank in 2004
California	1	California	1
Florida	2	Idaho	6
Iowa	3	Arizona	11
Illinois	4	Oregon	15
Delaware	5	Washington	23
Idaho	6	Colorado	32
Indiana	7	Nevada	39
Rhode Island	8	Utah	40
Georgia	9	New Mexico	42
Massachusetts	10	Texas	43
Arizona	11	Montana	44
		Wyoming	48

⁹ See California Water Plan Update 2009, Chapter 4, California Water Today, p. 4-22, Table 4-2, "California Water Balance Summary, 1998-2005"; Chapter 2, Agricultural Water Use Efficiency, p. 2-6.

¹⁰ See California Water Plan Update 2009, Chapter 8, Conjunctive Management and Groundwater Storage, pp. 8-10 and 8-11, Box 8-1, "Importance of Groundwater to California Water Supply."

¹¹ See California Water Plan Update 2005, Chapter 3, California Water Today, p. 3-9, Table 3-1, "California Water Summary."

Meanwhile, while agricultural production in California is most notable for its large proportion of specialty fruit, vegetable, and nut crops, in terms of the agriculture's global footprint, the graph below¹² shows that the United States as a whole, along with China, the Korean Republic, Japan, Germany, and the United Kingdom, is among the most efficient producers of the world's food staples (cereals, pulses [peas, beans, and lentils], and roots/tubers):



Moreover, not only is the United States among the most efficient agricultural producers in the world, but as shown in the graphics which follow, it is also one of the largest,¹³ in addition to producing more food per unit of labor,¹⁴ while using less water than in most countries around the world (including, especially, the high-input, low-productivity agricultural economies observed in most developing countries).¹⁵

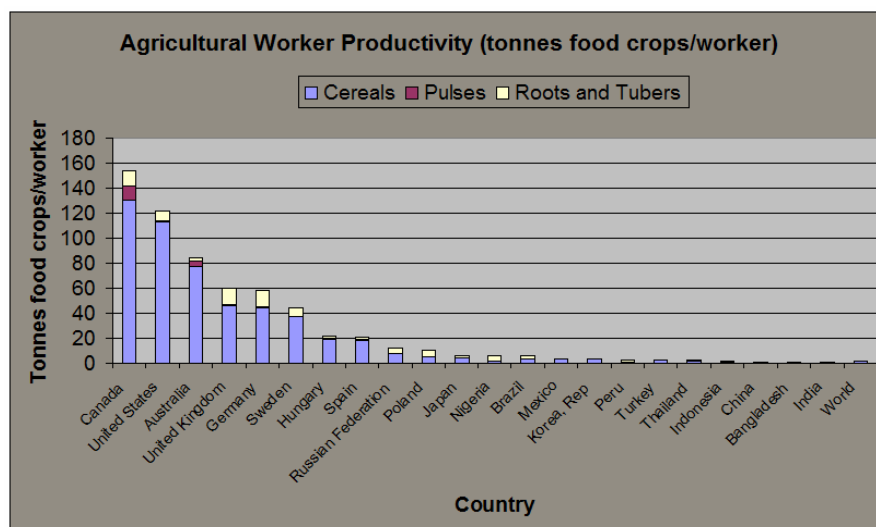
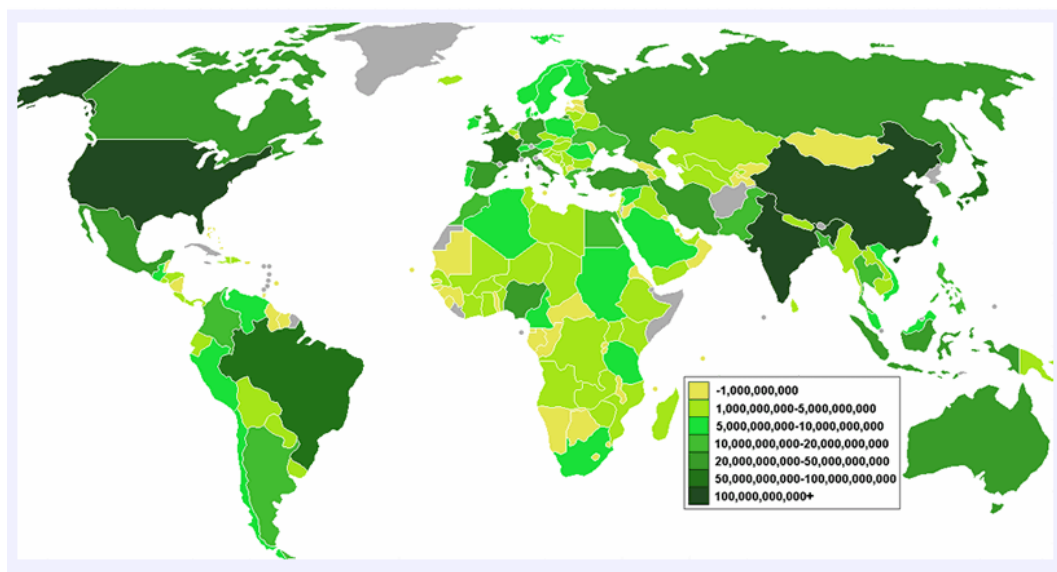
¹² See graphic, "Productivity of Food Crop Land (tonnes food crops/Ha)." Source: "The "Eco-Footprint" and the productivity and efficiency of land use," August 26, 2007 post, <http://human-macroecology.blogspot.com/2007/08/eco-footprint-and-productivity-and.html>.

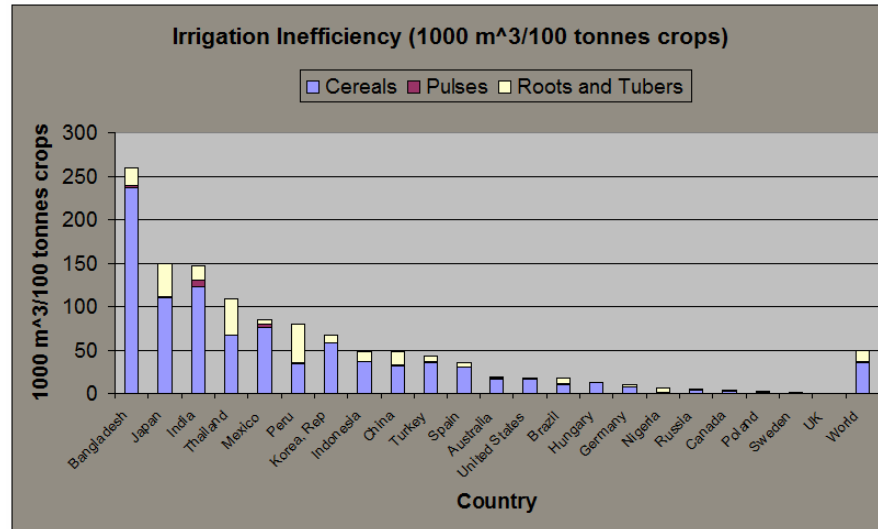
¹³ See graphic, "Agricultural output by country, assessed by USD value of their output, as of 2006." Source: Centre for Research on Globalization, "Catastrophic Fall in Global Food Production," February 10, 2009, <http://www.globalresearch.ca/index.php?context=viewArticle&code=DEC20090210&articleId=12252>.

¹⁴ See graphic, "Agricultural Worker Inefficiency (Workers/100 tonnes crops)." Source: "The "Eco-Footprint" and the productivity and efficiency of land use," August 26, 2007 post, <http://human-macroecology.blogspot.com/2007/08/eco-footprint-and-productivity-and.html>.

¹⁵ See graphic, "Irrigation Inefficiency (1000 m³/100 tonnes crops)." Source: See *ibid*.

Agricultural output by country, assessed by USD value of their output, as of 2006.





3. The Importance of U.S. and California Agriculture to International Trade

A cause for serious long-term concern, the United States' large and growing trade deficit in 2009 reached \$534 billion.¹⁶ With \$115.4 billion in exports in 2008, agriculture is not only a major source of exportable goods for the United States, but indeed it is currently the first among just a very few export categories in the United States' increasingly service- and import-centered economy to carry an actual trade surplus.¹⁷ Meanwhile, California leads the nation in agricultural exports by a margin of roughly double the exports of any of the states in the next closest tier of contenders (Illinois, Iowa, Texas, Nebraska, Kansas, and Montana).¹⁸

The significance of these facts should not be understated: "Agriculture," according to the USDA's Foreign Agricultural Service, "is one of only four categories with a U.S. trade surplus, whereas seven categories have trade deficits."¹⁹ According to the same source, "This trade surplus for agriculture has increased more than 500 percent since 2006 and is forecast to remain above \$20 billion in Fiscal Year 2010."²⁰ "Agriculture," the source concludes, "leads all U.S. product groupings with the largest trade surplus at \$23 billion in fiscal year 2009—almost triple the next largest category (transportation items: vehicles, aircraft and vessels), which has a trade surplus."²¹

¹⁶ USDA Foreign Agricultural Service, "U.S. Agriculture's Trade Balance,"

http://www.fas.usda.gov/cmp/highlights/2009/ag_trade_balance_Dec09.asp.

¹⁷ Source: USDA Economic Research Service, "Foreign Agricultural Trade of the United States (FATUS)," www.census.gov/compendia/statab/2010/tables/10s0821.xls; USDA Foreign Agricultural Service, "U.S. Agriculture's Trade Balance,"

http://www.fas.usda.gov/cmp/highlights/2009/ag_trade_balance_Dec09.asp.

¹⁸ USDA Economic Research Service, "State Export Data," published June 29, 2009,

<http://www.ers.usda.gov/data/stateexports/>.

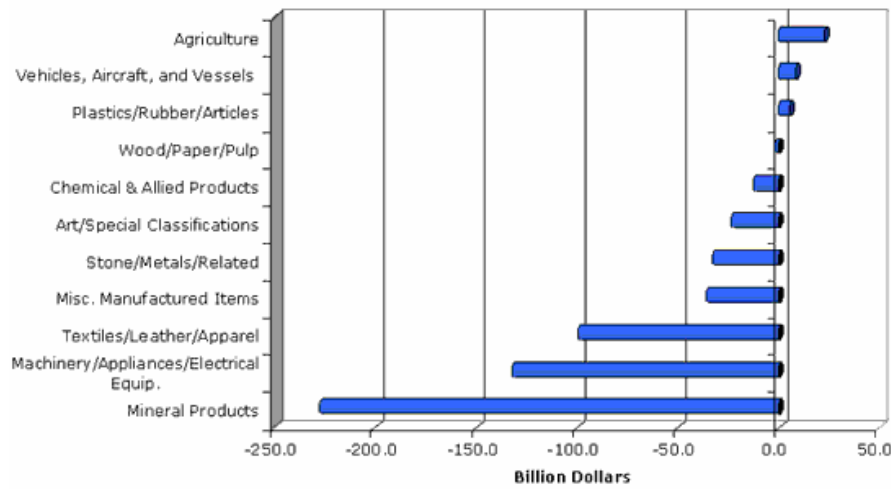
¹⁹ USDA Foreign Agricultural Service, "U.S. Agriculture's Trade Balance,"

http://www.fas.usda.gov/cmp/highlights/2009/ag_trade_balance_Dec09.asp.

²⁰ *Ibid.*

²¹ *Ibid.*

Agriculture Has the Largest FY 2009 Trade Surplus of U.S. Export Catagories



4. Agriculture in California's Central Valley Generally

The Delta and its tributaries irrigate over 7 million acres of the world's most productive and diverse cropland in the world. California is the number 1 agricultural producer and exporter, and the leading dairy state in the U.S. (22 percent of U.S. milk supply), grows more than 400 different commodities statewide, and supplies roughly half of U.S.-grown fruits, nuts, and vegetables, including 3/4 of all lettuce.²² Of a total of \$36.6 billion in direct farm sales for California in 2007,²³ upwards of 60 percent would have been produced in the valley floor of the Delta's watershed, also known as the Central Valley,²⁴ with a large portion of the State's remaining agricultural production occurring in areas also receiving a portion of their water supplies from the Delta in Southern California and in the California Central Coast area. \$36.6 billion represents 12.8 percent of farm sales nationally,²⁵ yet in terms of acreage, the Central Valley amounts to just 1 percent of farmland nationwide.²⁶ "Including multiplier effects," says the U.C. Davis Agricultural Issues Center, "California farms and related processing industries generate 7.3 percent of the state's private sector labor force [...] and account for 5.6 percent of

²² See "California Agricultural Highlights, 2008-2009," California Department of Agriculture" (<http://www.cdfa.ca.gov/Statistics/>); 2008 Agricultural Overview, USDA, NASS, California Field Office (<http://www.cdfa.ca.gov/Statistics/>); *The State of the Great Valley—Assessing the Region Via Indicators*, Great Valley Center, "Agricultural Indicators—Productivity and Diversity of California Agriculture" (<http://www.greatvalley.org/indicators/docs/economic/ag/diversity.pdf>).

²³ See "California Agricultural Highlights, 2008-2009," California Department of Agriculture" (<http://www.cdfa.ca.gov/Statistics/>).

²⁴ *The State of the Great Central Valley of California: Assessing the Region Via Indicators—The Economy* (Third Edition, 2009), Great Valley Center, page 26 (63 percent of agricultural output in 2007 occurred in Central Valley) (http://www.greatvalley.org/artman2/uploads/1/econindicators09_final.pdf).

²⁵ "California Agricultural Highlights, 2008-2009," California Department of Agriculture" (<http://www.cdfa.ca.gov/Statistics/>).

²⁶ *The State of the Great Valley—Assessing the Region Via Indicators*, Great Valley Center, "Agricultural Indicators—Productivity and Diversity of California Agriculture" (<http://www.greatvalley.org/indicators/docs/economic/ag/diversity.pdf>).

state labor income.”²⁷ “Excluding ripple effects,” says the same source, “agriculture directly accounts for 12.6 percent of jobs and 8.4 percent of labor income” statewide, while in the Central Valley itself “[a]gricultural production and processing [...], including ripple effects, generate 24.2 percent of private sector employment and 18.5 percent of the private sector labor income.”²⁸ For every \$1 billion in direct farm sales, the Issues Center estimates, “there are 18,000 jobs created in the state, about 11,000 in the farm sector itself plus about 7,000 in other industries.”²⁹

California is the top agricultural producing state in the nation, well of ahead of the closest contenders, Iowa, Texas, Nebraska, and Illinois.³⁰ California is the nation’s leading producer of over 70 different crops.³¹ Of the nation’s 10 agricultural top counties, 9 are located in California.³² California also leads the nation in agricultural exports, with \$10.9 billion in exports to some 156 countries worldwide in 2007.³³ Almonds, wine, dairy products, cotton, table grapes and walnuts make up nearly 50 percent of California agricultural exports.³⁴ About 70 percent of California farm cash receipts are linked to markets in the U.S., while the remaining 30 percent derives from exports.³⁵

5. California Agriculture and Healthy Eating

As noted, if the mid-West is the nation’s “breadbasket,” California is its “salad bowl.” California is unique, not only in the United States, but in the world, in terms of the optimal combination of water and soil resources and climatic conditions that make it ideally suited for specialty fruit, vegetable, and nut crops. California’s preeminence as the nation’s most important fruits, vegetable, and nut producing region assumes even greater significance when one considers the nutritional implications of this fact—and, yet, the highest quality farmland, both in California and nationwide, is in sharp decline.

According to the American Farmland Trust, and the United States Department of Agriculture’s 2007 National Resources Inventory, over the 25-year period extending from 1982 to 2007, the lower 48 United States lost more than 23 million acres of agricultural land.³⁶ In the past, this long-term trend has been largely the result of poor land use planning; in California today,

²⁷ U.C. Davis Agricultural Issues Center, The Measure of California Agriculture Highlights (<http://aic.ucdavis.edu/publications/moca/moca09/mocacard09.pdf>).

²⁸ Ibid.

²⁹ Ibid.

³⁰ USDA 2008 CA Agricultural Overview.

³¹ The State of the Great Central Valley of California: Assessing the Region Via Indicators—The Economy (Third Edition, 2009), Great Valley Center, page 26 (http://www.greatvalley.org/artman2/uploads/1/econindicators09_final.pdf).

³² “California Agricultural Highlights, 2008-2009,” California Department of Agriculture (<http://www.cdfa.ca.gov/Statistics/>).

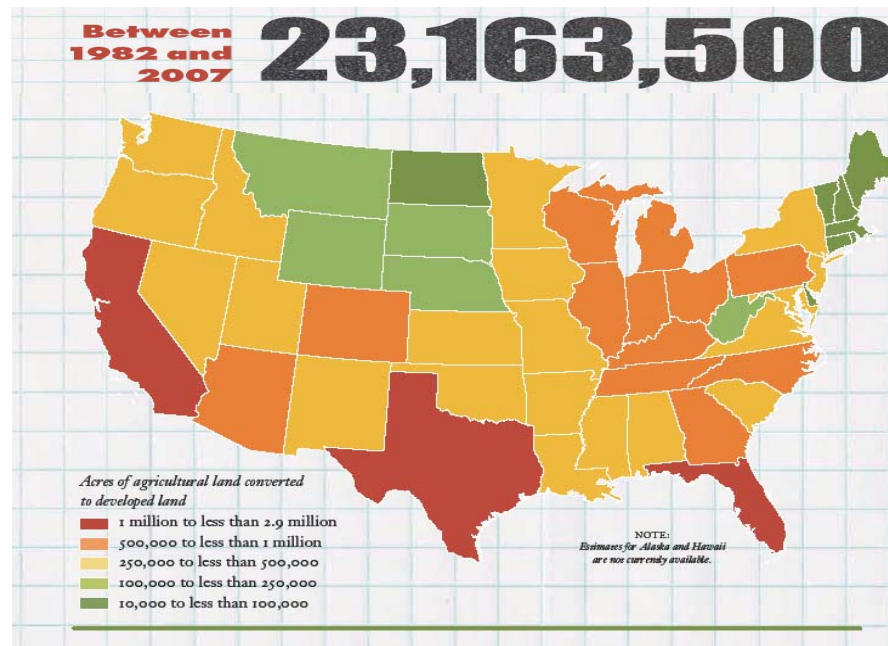
³³ “California Agricultural Highlights, 2008-2009,” California Department of Agriculture (<http://www.cdfa.ca.gov/Statistics/>).

³⁴ U.C. Davis Agricultural Issues Center, The Measure of California Agriculture Highlights (<http://aic.ucdavis.edu/publications/moca/moca09/mocacard09.pdf>).

³⁵ U.C. Davis Agricultural Issues Center, The Measure of California Agriculture Highlights (<http://aic.ucdavis.edu/publications/moca/moca09/mocacard09.pdf>).

³⁶ *American Farmland*, Fall/Winter 2010, “Farmland by the Numbers,” Demsey and Ferguson, pp. 13-17, <http://www.farmland.org/news/magazine/2010fall-winter/default.asp>. Citing USDA 2007 National Resources Inventory.

however, it appears that water supply availability, regulation, and misguided public policies may soon replace growth as the leading cause of productive farmland loss.



Source: *American Farmland*, Fall/Winter 2010, “Farmland by the Numbers,” Demsey and Ferguson, pp. 13-17, <http://www.farmland.org/news/magazine/2010fall-winter/default.asp>

As can be seen in the graphic above, over the 25 year period in question (from 1982 to 2007), California and Florida came in behind Texas (at an astounding 2.9 million acres), with losses of more than 1.5 million acres each. Aside from their sheer enormity, in order to understand the true significance of these losses in California and Florida, it is important to understand these two states alone provide well over half of the nation’s fruits and vegetables.

As observed by the American Farmland Trust, “[Recent farmland loss in the United States] is having a disproportionate impact on the states that produce the bulk of fruits and vegetables for the United States.”³⁷ The same source continues:

Two of the three states experiencing the largest acre losses of agricultural land—Florida and California—currently account for **47 percent of the nation’s vegetables** and **71 percent of its fruit production** based on market value. The combination of soils, unique micro-climates and extended growing seasons makes the cropland in these states an **irreplaceable agricultural resource**.³⁸

Ironically though, even as we pave over and systematically desiccate millions of acres of our best fruit and vegetable producing farmland, the American Farmland Trust and the USDA estimate that the United States needs “at least another 13 million acres of farmland growing fruits and

³⁷ *Ibid.*

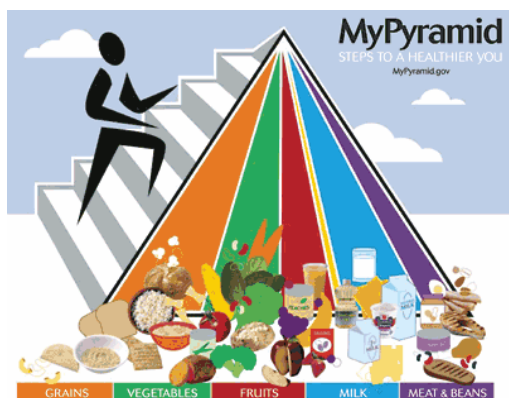
³⁸ *Ibid.* (emphasis added).

vegetables just for Americans to meet the minimum daily requirement of fruits and vegetables set by the U.S. Department of Agriculture's (USDA) 2005 dietary guidelines."³⁹

The problem is described in further detail by investigators at the USDA's Economic Research Service, as follows:

If Americans were to fully meet the [USDA's Dietary Guideline] recommendations for fruit, they **would need to increase daily fruit consumption by 132 percent**. The additional demand would require U.S. producers to **more than double annual harvested fruit acreage from 3.5 million to 7.6 million**. As part of the dietary change, **daily vegetable consumption would need to rise by about 31 percent**, and the mix of vegetables consumed would need to change. For example, consumption of legumes, like kidney beans and lentils, would have to increase fourfold, and consumption of starchy vegetables would have to decline by a third. Accordingly, **annual harvested acres of vegetables in the U.S. would need to increase by about 137 percent, from 6.5 million to 15.3 million**, to meet this new demand.⁴⁰

And yet, of course, it is widely known that the average American's consumption of fruits, vegetables, and other food groups as a percentage of dietary intake is well below the recommended quantities and proportions, while the average American's intake of other less healthy categories (such as sugars, fats, and carbohydrates) is well above recommended levels. For evidence of this imbalance, one need look no further than America's epidemic levels of obesity, diabetes, cardiovascular disease, and other health issues.



³⁹ American Farmland Trust, Press Release, July 7, 2010, "The United States Needs 13 Million More Acres of Fruits and Vegetables to Meet the RDA."

⁴⁰ USDA Economic Research Service, "Meeting Fruit and Vegetable Dietary Recommendations Will Impact Agriculture."

Required changes in average daily consumption of servings of dark green and orange vegetables and legumes to meet recommended 2005 USDA dietary guideline recommendations for fruits and vegetables

Food group	Dietary Guidelines recommendations for a 2,000-calorie diet	Servings available in 2003 1/	Change needed to meet recommendations 2/
	<i>Cups per day</i>		<i>Percent</i>
Fruit	2.0	.9	132
Vegetables	2.5	1.9	31
Dark green	.4	.2	175
Orange	.3	.1	183
Legumes	.4	.1	431
Starchy	.4	.7	-35
Other	.9	.9	2

1 Adjusted for losses from marketing and spoilage.

2 Computed from unrounded numbers.

Source: Prepared by USDA, Economic Research Service.

In light of such concerns, it seems a legitimate question: Is it wise to offshore and curtail domestic fruit and vegetable production—and, in balancing food production against other values, can we really say that this is “in the public interest”?

6. California as a National and World Leader in Agricultural Water Use Efficiency

Despite dwindling water supplies, an increasingly difficult regulatory environment, and loss of acreage statewide, California farmers have invested hundreds of million of dollars to achieve more “crop per drop” of water applied. For example, it is estimated that between 2003 and 2008, growers in the San Joaquin Valley invested over \$1.5 billion dollars in high-efficiency irrigation equipment, infrastructure, and technology.⁴¹ According to DWR’s recently released 2009 California Water Plan Update, agricultural water use statewide (“crop applied water use”) has fallen 14.6 percent over the last 40 years (1967-2007), from 31.2 million acre-feet to an estimated 26.7 million acre-feet in 2007.⁴² Despite this reduction in total applied water use, however, DWR estimates that “real, inflation-adjusted gross revenue” for California agricultural products during the same time period increased 84 percent, from \$19.9 billion in 1967 to \$36.6 billion in 2007.⁴³

⁴¹ Source given as California Farm Water Coalition per DWR California Water Plan Update 2009, Volume 2, Resource Management Strategies, Chapter 2, Agricultural Water Efficiency, p. 2-12.

⁴² Attachment 6: Department of Water Resources, California Water Plan Update 2009, Volume 1, Strategic Plan, Chapter 4, “California Water Today,” page 4-13, “Comparing Changes in Applied Water Use and the Real Gross Value of Output for California Agriculture: 1967 to 2007.”

⁴³ Ibid.

7. Past Regulatory Reallocation of Agricultural Water Supplies to Instream Environmental Use

In addition to reduced water use from increased efficiency, rededication of 800,000 acre-feet of CVP yield under the 1991 Central Valley Project Improvement Act, subsequent loss of Trinity River supplies, additional dedications to instream flows and water quality under the Bay-Delta Accord, the 1995 Bay-Delta Water Quality Control Plan, the Vernalis Adaptive Management Plan, the Yuba Accord and other agreements, limited groundwater supply, and the latest deep cutbacks associated with the existing National Marine Fisheries Service and United States Fish and Wildlife Service OCAP biological opinions and San Joaquin River Restoration Agreement have greatly eroded the quantity and reliability of agricultural water supplies in California. Whereas agriculture in the year 2000 accounted for about 41 of applied water use from both surface and groundwater in a normal year, environmental and urban water use accounted for approximately 48 and 11 percent, respectively.⁴⁴ Recent significant regulatory reallocations since 2000 under the NMFS and USFWS OCAP biological opinions, under the San Joaquin River Restoration Agreement, and other developments notably increased the proportion of water going to environmental uses and substantially reduced current allocations to urban and agricultural use.

Driving It Home: Policy Conclusions Concerning California Agriculture, in the Context of the DSC's Delta Agricultural White Paper Specifically, and the Larger Resource Allocation Debate Within the State In General

Having identified some of the key facts and issues relating to the importance of agriculture in the Delta, California, and the world in the preceding sections, several conclusions emerge concerning the DSC's Delta Plan and White Paper specifically and the larger resources allocation debate within the State in general:

1. As noted, agriculture throughout the world requires significant amounts of land and water. At the same time there is, around the world, a finite amount of land and water that is both suitable and available to safely and efficiently produce, transport, and supply food to sustain the planet's large and steadily growing population.
2. Dedicating the significant areas of land and volumes of water necessary for human food production results, inevitably, in a proportionate reduction in available land and water resources for other purposes.
3. Despite the inevitable truth of the foregoing statement, water and land utilized for food production does *not* go only to the farmer or the handful of workers in his direct employ; rather, it goes into the agricultural product that ultimately reaches each and every one of us—though not without having, first, navigated the entire extended network of supporting and supported services, industries, and processes, each with some quantum of associated economic activity along the way, *en route* to the consumer.

⁴⁴ U.C. Davis Agricultural Issues Center, The Measure of California Agriculture Highlights (<http://aic.ucdavis.edu/publications/moca/moca09/mocacard09.pdf>).

4. Outsourcing food production and environmental costs of necessary food production to other parts of the world has the clearly foreseeable result of redirecting those environmental costs to other countries and societies—often in parts of the world with greater remaining biodiversity, more intact ecosystems, and far fewer environmental regulations and protections.
5. Outsourcing food production to other countries will make the United States increasingly dependent on other countries for food, in the way we are presently dependent upon other countries for oil and manufactured goods.
6. Ecosystems and fish and wildlife populations impacted by historical land and water development can likely be rehabilitated only to a point; thus, the possible limited extent to which depleted species and ecosystems can be recovered and restored should perhaps act as a check on our haste to sacrifice other important values in the pursuit of anticipated benefits which may in fact never materialize.
7. Too frequently now, one hears proposals such as the one presented not long ago to the Stewardship Council itself regarding the West Side of the San Joaquin Valley, that portray one or another agricultural “solution” as the solution to any number of other problems—but whose real thrust is to drastically curtail, or simply remove from the equation, the existing agriculture in one or another region of the state. The way this is typically presented, the particular solution in question *only* requires following the West Side, *only* requires abandoning the Delta, *only* involves shutting down pumps or draining reservoirs in the Sacramento Valley or on the San Joaquin River and its tributaries: In short, it *only* involves sacrificing agriculture. What such proposals ignore is the point strenuously argued here, first, that agriculture in general is a critically important and necessary activity for the human race; second, that California’s climate, infrastructure, and land and water resources make it specially suited for tilling and harvesting of the land as are very few other places in the world; and, third, that it is not *only* the West Side or the East Side or the Delta or the Sacramento Valley that is being steadily eroded by misguided policies and regulations, but rather *all* of the State’s major agricultural regions.

Comments Specific to the White Paper and Delta Agriculture

With respect to the Delta, there are several relevant points that are not reflected or acknowledged in the White Paper, while other information included in the Paper, we believe, paints an unduly gloomy picture:

1. Delta Agriculture, Inherent Value and Importance

As to the inherent significance and importance of Delta agriculture itself, and why it is *not* an expendable commodity, a few choice statistics from the White Paper itself will hopefully suffice:

- a. First, as noted, “[a]bout 75 percent of the Delta’s total land area is classified as Prime Farmland, which is defined as land with the best physical and chemical

- characteristics, and a reliable irrigation water supply,” whereas, in contrast, “only 18 percent of the entire state’s agricultural land is classified as Prime Farmland.”⁴⁵
- b. “Although the exact contribution from the Delta to the state’s GDP is unknown, the value per acre contribution is greater than other agricultural regions in the state... In addition, ‘virtually every one of the crops in [the Delta’s] diverse [] agricultural palette, from field crops to blueberries, produces greater yields and fetches higher per unit prices than do most other growing regions of these crops in the state.’ [citing the California Department of Food and Agriculture, 2008].”⁴⁶
 - c. Whereas “California’s agricultural exports reached an all-time high of \$12.9 billion [in 2008],” and “for every billion dollars in agricultural exports, 27,000 jobs are created[,] and each dollar of exports generates \$1.70 in economic activity[, ...] the Delta contributes to 41 out of the 55 top-value crop exports in California.”⁴⁷

2. Delta Agriculture, Agricultural Employment

The discussion of “Agricultural Employment” on page 4-3 mirrors the White Paper’s discussion of California agriculture as a percentage of the State’s economy in that it appears to again invite the conclusion that, merely because the percentage of the workforce employed in Delta agriculture is proportionately small, that agriculture in general, and Delta agriculture in particular, is somehow insignificant or readily expendable. Thus, although agriculture represents a full 38 percent of just 2,800 jobs in the Primary Zone of the Delta itself, the White Paper notes the Delta agriculture accounts for just 2 percent of total employment in the five Delta counties, and just 4.4 percent of employment within both the Primary and Secondary Zones of the Delta (including portions of the Secondary Zone that are now heavily urbanized).⁴⁸ Even more overtly appearing to bait the false conclusion that Delta agriculture is somehow expendable, near the bottom of page 4-3, the White Paper includes the odd conflation of statistics that, while agricultural employment declined by 27 percent Delta-wide and 40 percent in the Primary Zone of the Delta between 2002 and 2008, overall employment in the 5 Delta counties (including rapidly urbanizing and expanding portions of those counties) grew 20.5 percent, while “agricultural exports [statewide] increased.”⁴⁹

This trend toward an ever leaner and more efficient agricultural workforce, however, is not new and is not unique to the Delta where, even as agricultural labor inputs have steadily and dramatically declined over time, yields and incomes have just as dramatically increased. It is a trend driven, in part, by current U.S. immigration policy and the mounting regulatory burden of doing business. In any case, it is a fact that, even as the percentage of the national workforce employed in agriculture has declined from 41 percent in 1900, to 21.5 percent in 1930, to 16 percent in 1945, to 4 percent in 1970, and to 1.9 percent in 2000-02,⁵⁰ U.S.

⁴⁵ White Paper, p. 3-3.

⁴⁶ White Paper, p. 4-2.

⁴⁷ White Paper, p. 4-11.

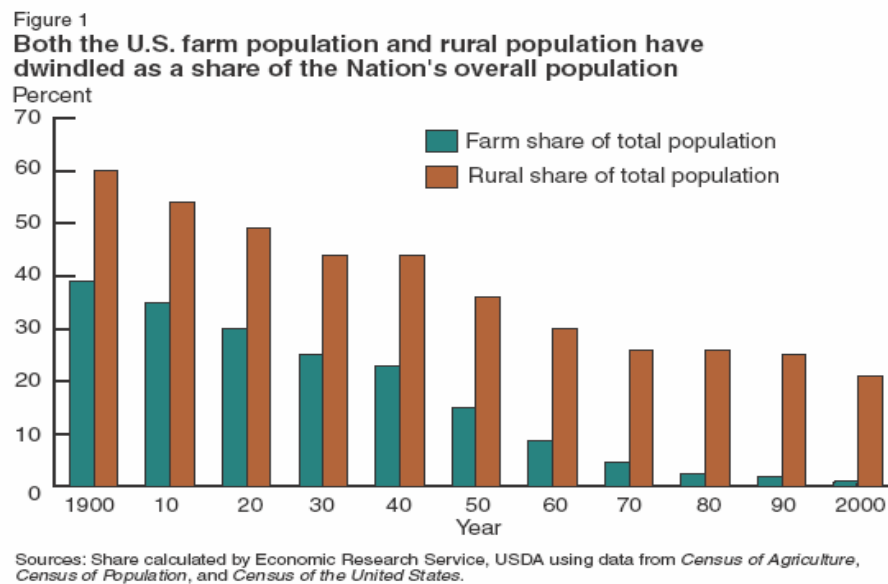
⁴⁸ *Ibid.*

⁴⁹ White Paper, p. 4-3.

⁵⁰ USDA Economic Research Service, “The 20th Century Transformation of Agriculture,” Economic Information Bulletin No. 3, June 2005.

agricultural output has more than doubled in the last 50 years, growing at an average rate of 1.76 percent per year.⁵¹

Economic forces, including global markets, have led to increasing specialization, larger farms, and greater mechanization.⁵² Meanwhile, an overwhelming proportion of the population has gradually shifted from rural communities to large urban population centers (or, in many cases, those rural communities have become urban centers), while a smaller and smaller proportion of even the remaining rural population itself has remained in agriculture. Considering this long-term demographic trend, is it any wonder that some 98 percent of the population today is now almost completely decoupled, both culturally and economically, from a now remote agrarian past?⁵³ It would seem that the fact that farmers in the Delta, elsewhere in California, the United States, or the world now produce more with less than ever before should hardly form the basis for concluding agriculture is now obsolete, expendable, or any less essential than ever.



3. Delta Agriculture, “High-” versus “Low-Value” Crops

Again displaying an inordinate preoccupation with bare economics, the White Paper makes much of the relatively slower rate of conversion from “lower value” field and truck crops in Delta to “higher value” tree, vine, and nursery crops, when compared to the agriculture elsewhere in the larger 5 Delta county region. However, it is important to recognize that so-called “high value” crops presently fetch a higher price because of a particular level of market demand for those crops or the products derived from them at this time. Moreover, agricultural commodity markets, in general, encompass a much broader array of products, each of which has its own place in the market. Agricultural cropping patterns and fluctuating

⁵¹ USDA Economic Research Service, 2006 ed., Chapter 3.4, “Productivity and Output Growth in U.S. Agriculture.”

⁵² *Ibid.*

⁵³ *Ibid.*

acreages and levels of production of different crops wax and wane and adjust over time in response to changing market signals, whether in the Delta or elsewhere in California, the United States, or the world.

Lands in one part of the Delta or State may be more suitable for the production of one type of commodity or commodities than for another, due to differences in soils, the lack or presence of drainage, water supply and water quality, ambient temperatures and micro-climates, transportation infrastructure, labor, and processing facilities. Thus, one area or region may specialize in, or naturally gravitate toward, a certain type of agriculture, while other areas may focus on entirely different types of agriculture.

Another problem with the White Paper's percentage-based snapshot of agriculture in the Delta, versus agriculture in the adjacent areas of the five counties outside of the Delta, is that this limited perspective fails to capture the relative quality, density, and diversity of agricultural land uses in the two areas. Thus, while areas adjacent to the Delta may boast large acreages of vines, for example, as well as nurseries to supply the high-value demand for nursery products from sizeable urban population centers found in these same adjacent areas—and while these adjacent areas may also include large acreages of grazing land, for example—it is a fact that few areas are so richly endowed with prime soils, moderating climate effects, or abundant easily accessed water for irrigation as the Delta.

Additionally, as the White Paper itself acknowledges, the Delta's current, proportionately lower ratio of so-called "higher value" orchard and vineyard crops and nurseries to so-called "lower value" truck and field crops, in fact provides important wildlife habitat not found elsewhere in the five-county region or state. As the White Paper itself notes, "orchards, vineyards, and confined animal production facilities typically have more intensive chemical application and agricultural waste than other agriculture," while "[s]easonal or nonpermanent crops such as small grains (wheat and barley), field crops (corn, sorghum, and safflower), truck crops (tomatoes and sugar beets), and forage crops (hay and alfalfa) have lower or seasonally related impacts and generally are more compatible with wildlife uses."⁵⁴ Thus, for example, as the White Paper itself notes, "the Delta provides approximately two-thirds of the wintering habitat of the California population of the greater sandhill crane," a fully protected species under the California Endangered Species Act that "spends the winter foraging primarily in harvested corn, along with winter wheat, alfalfa, pasture, and fallow fields; congregating along agricultural field borders, levees, rice checks, or ditches, or in alfalfa fields or pastures; and roosting in shallowly flooded open fields or wetlands interspersed with uplands."⁵⁵

4. Delta Agriculture, Water Quality

The White Paper's focus on agricultural runoff in the Delta as a supposed source of significant water quality problems in the Delta⁵⁶ completely omits any mention of the fact that recent monitoring and research have, in fact, pinpointed urban sources of contaminants,

⁵⁴ White Paper, p. 5-3.

⁵⁵ *Ibid.*

⁵⁶ See, e.g., White pp. 5-2, 6-3.

including both unregulated pyrethroids pesticides in urban stormwater and ammonia, as a much more likely source of ecological harm than Delta agriculture.⁵⁷ More importantly, perhaps—particularly at a time when the State is considering a 15,000 cfs peripheral conveyance structure and inundation of various Delta islands to restore tens of thousands of acres of tidal marsh habitat—the White Paper’s “Water Quality” section includes no mention whatsoever of salinity intrusion, water levels, and lack of circulation or “null zones” as the Delta’s most significant water quality issues, or of the need for potential avoidance or mitigation measures should the proposed conveyance facility and restoration significantly alter or worsen the problem of salinity intrusion into the Delta.

5. Delta Agriculture, Farmland Conversion

The White Paper highlights quite prominently the loss in recent decades of important farmland in the Delta to urban development,⁵⁸ yet it includes no commentary whatsoever on the significant loss of an equivalent area of agricultural land during the same period to a large and growing acreage of conservation and open space lands in the Delta⁵⁹—or of the much larger potential, future loss of some 80,000 to 100,000 acres of existing farmland to various proposed restoration projects.

6. Delta Agriculture, Factually Erroneous Information Concerning Environmental Problems Facing the Delta

Other portions of the White Paper appear to allude to problems which exist in some other agricultural areas of the Central Valley, but which do not exist or, if they exist at all, exist to a much lesser extent in the Delta. Regarding salt build-up in soils and groundwater, for example,⁶⁰ while this is again a significant problem in some areas of the state, assuming there is sufficient freshwater for leaching in the Delta, it is there a much less severe problem than elsewhere. Similarly, concerning water supply and groundwater depletion,⁶¹ while this is a significant problem in some of the areas adjacent to the Delta, in the parts of the Valley south of the Delta, and some other areas of the state, in the Delta, surface water from channels and sloughs is by far the primary source of irrigation water while, far from being overdrafted, the water table on many Delta islands is in fact so high that farmers must actually pump water off the land and into adjacent channels and sloughs to prevent water logging of the root zone.

7. Delta Agriculture, Future Risks

While the White Paper’s “Future Risks and Policy Issues” makes much of the familiar list of imminent threats to the Delta from subsidence, to levee failures, to climate change, the reality is that all of these are risks Delta farmers and the State of California have lived with in the past, and all are manageable. After all, it is hardly as if the Delta were the only part of

⁵⁷ See, e.g., Glibert, 2010; Weston, 2009; Dugdale, 2007.

⁵⁸ White Paper, pp. 3-3 through 3-5, 6-2.

⁵⁹ White Paper, p. 3-5, Figure 3-1, “Change in Delta Farmland between 1984 and 2008.”

⁶⁰ White Paper, p. 6-3, “Soil Salinity.”

⁶¹ White Paper, p. 6-4, “Water Supply.”

California or the world that faces various risks and unknowns in the future, and even from one moment to the next: An earthquake, a mudslide, a wildfire, or a drought could strike Los Angeles or San Francisco today, tomorrow, or later this year. Our world is in a state of flux. In the face of such certainty, it is only sensible to do in the Delta what we would do in any other part of the world: Plan, prepare, invest private and public monies appropriately, and responsibly manage known risks as best we can.

Conclusion:

This letter is an appeal to the Council—and to others following developments in the Delta and in the land and water and environmental arenas generally in California. First, please remember that our farmers are our food supply—in the Delta, elsewhere in California, America, or the world. Second, in terms of sheer agricultural bounty, please recognize that California's Central Valley, including the Delta, is nothing less than a treasure comprised of a unique confluence of climate, water, and land resources virtually unparalleled in any other part of the world. Third, recognizing these important points, please consider and recommit the State of California to the protection and preservation of its irreplaceable agricultural resources as a matter of critically important public policy, not only in the Delta, but throughout the State.

Sincerely,



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